CLAIMS

What is claimed is:

1. An apparatus, comprising:

a memory storing a field of pixels of video information, the field including a plurality A of lines of pixels, wherein each of said lines includes B pixels;

a segment buffer that stores a plurality C of line segments, wherein each line segment includes D pixels and is a segment of a different line of the field, wherein C is less than A and wherein D is less than B, and wherein the segment buffer has a maximum pixel storing capacity of C times D; and

an interpolator mechanism that receives pixels from the segment buffer and generates therefrom interline gap pixels.

2. The apparatus of Claim 1, wherein a first set of pixels is read out of the memory and is written into the segment buffer at the same time that the interplator mechanism receives a second set of pixels from the segement buffer and generates therefrom an interline gap pixel.

3. The apparatus of Claim 2, wherein the interpolator mechanism uses some but not all of the line segments of pixels stored in the segment buffer to interpolate the interline gap pixel, and wherein one of the line segments that is not used in the interpolation of the interline gap pixel is overwritten with the first set of pixels that is transferred from the memory.

4. The apparatus of Claim 1, wherein the segment buffer is written with successive C by D pixel segments of pixels of the field of pixels, and wherein each of the segments overlaps another of the segments such that each such pair of overlapping segments shares a plurality of pixels.

5. The apparatus of Claim 1, wherein each segment comprises a plurality of blocks of pixels, and wherein the interpolator mechanism determines whether each of the blocks exhibits a motion characteristic, and wherein if a block is determined to exhibit

the motion characteristic then a first type of interpolation is used to generate interline gap pixels for the block, and wherein if the block is determined not to exhibit the motion characteristic then a second type of interpolation is used to generate the interline gap pixels for the block.

6. The apparatus of Claim 5, wherein the interpolator mechanism comprises a motion history buffer, the motion histort buffer comprising a plurality of motion history bits, each motion history bit being indicative of whether a corresponding block of pixels exhibits the motion characteristic.

7. The apparatus of Claim 1, further comprising:

a memory controller than retrieves pixels from the memory that stores the field of pixels, and that writes the pixels retrieved into the segment buffer.

8. The apparatus of Claim 1, wherien the field of pixels is a field of interest, wherein the memory also stores a second field of pixels that precedes the field of interest, wherein the memory also stores a third field of pixels that is subsequent to the field of interest, and wherein the apparatus further comprises:

a second segment buffer through which pixels of the second field are passed to the the interpolator mechanism; and

a third segment buffer through which pixels of the third field are passed to the interpolator mechanism.